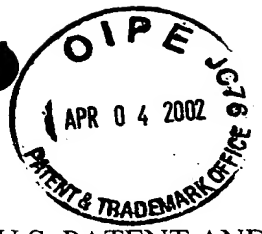
PNDF-01168 (00760068AA)




PATENT APPLICATION

IN THE U.S. PATENT AND TRADEMARK OFFICE

#4

In re patent application of

Tanaka

Serial No.: 09/974,793 Group Art Unit: 2661

Filed: October 12, 2001 Examiner: Not Assigned

For: SCHEDULING SYSTEM AND SCHEDULING METHOD FOR THE SAME

Assistant Commissioner for Patents
Washington, D.C. 20231



SUBMISSION OF FORMAL DRAWINGS

Sir:

Submitted herewith are sixteen (16) sheets of formal drawings comprising sixteen (16) figures for the above-identified patent application. Please substitute these drawings for the ones originally submitted.

Respectfully submitted,

Michael E. Whitham
Reg. No. 32,635

30743
PATENT TRADEMARK OFFICE

# FIG. 1 PRIOR ART

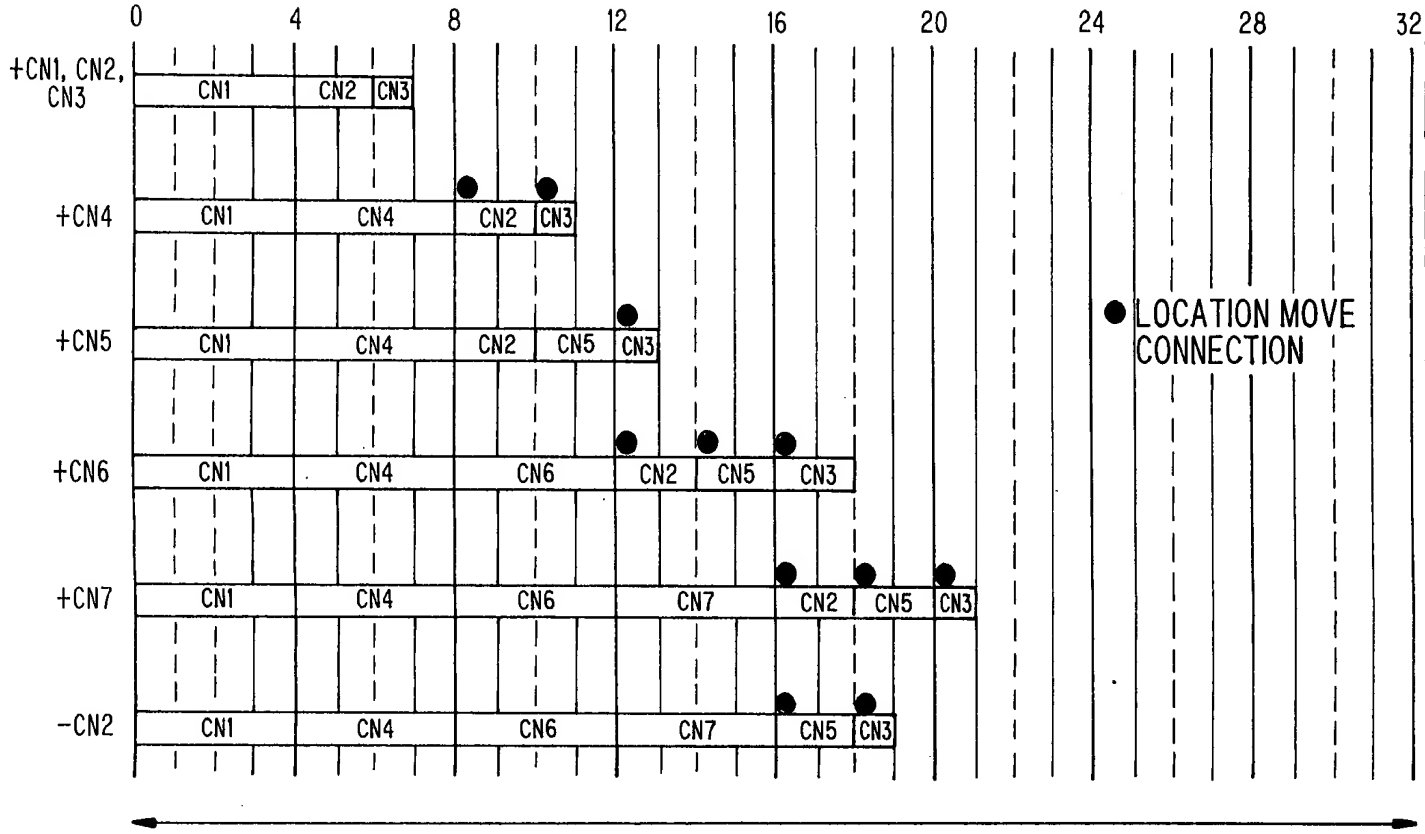



TABLE IN WHICH CONVERSION AS PCR VALUES HAS BEEN MADE

| | 8 | 4 | 2 | 1 |
|---|---|---|---|---|
| USED | 0 | 1 | 1 | 1 |
| FREE | 3 | 0 | 0 | 1 |

| | 8 | 4 | 2 | 1 |
|---|---|---|---|---|
| USED | 0 | 2 | 1 | 1 |
| FREE | 2 | 1 | 0 | 1 |

| | 8 | 4 | 2 | 1 |
|---|---|---|---|---|
| USED | 0 | 2 | 2 | 1 |
| FREE | 2 | 0 | 1 | 1 |

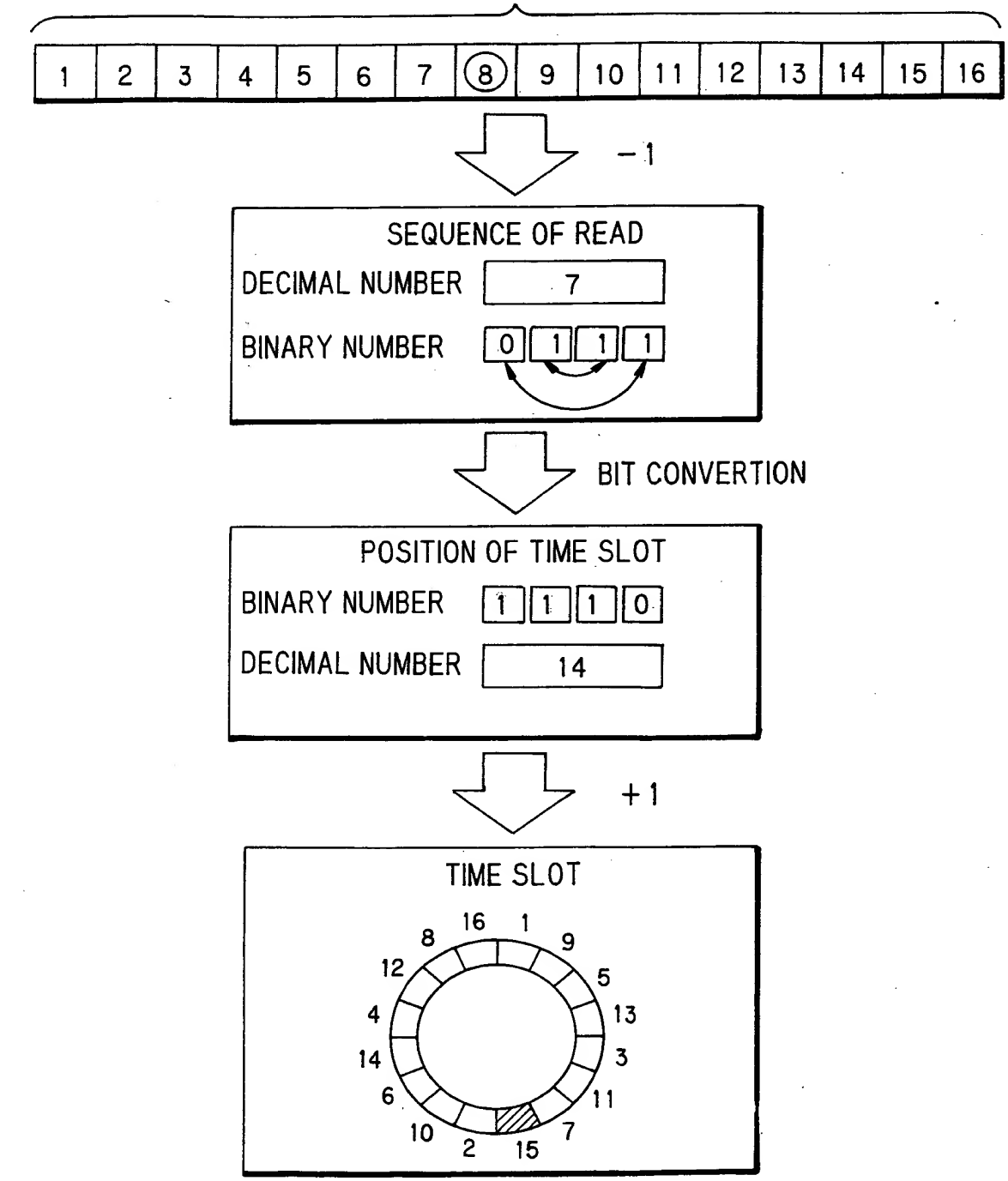
| | 8 | 4 | 2 | 1 |
|---|---|---|---|---|
| USED | 0 | 3 | 2 | 1 |
| FREE | 1 | 1 | 1 | 1 |

| | 8 | 4 | 2 | 1 |
|---|---|---|---|---|
| USED | 0 | 4 | 2 | 1 |
| FREE | 1 | 0 | 1 | 1 |

| | 8 | 4 | 2 | 1 |
|---|---|---|---|---|
| USED | 0 | 4 | 1 | 1 |
| FREE | 1 | 1 | 0 | 1 |

TEN : TOTAL NUMBER OF ENTRIES
FREE : IDLE AREA
USED : USED AREA
CN : CONNECTION

# FIG.2 PRIOR ART

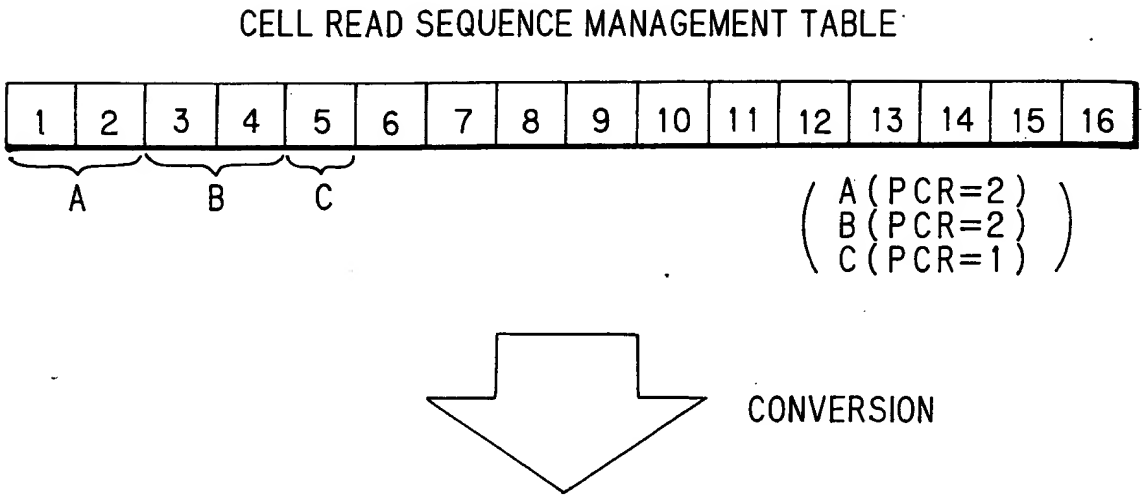


# FIG.3 PRIOR ART

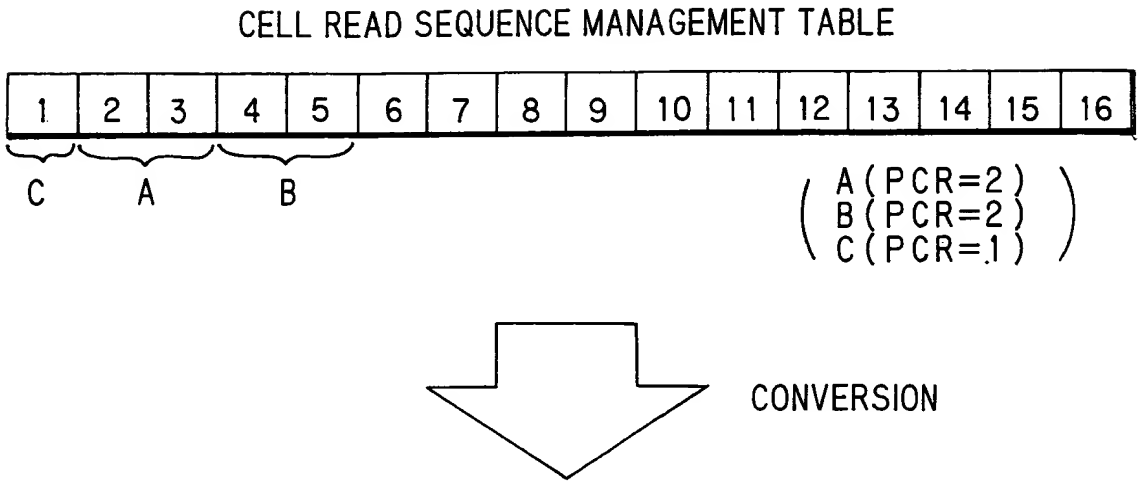
−1 REARRANGEMENT +1

| MANAGEMENT TABLE | (DECIMAL) | (BINARY) | (BINARY) | (DECIMAL) | POSITION OF TIME SLOT |
|---|---|---|---|---|---|
| 1 | 0 | 0 0 0 0 | 0 0 0 0 | 0 | 1 |
| 2 | 1 | 0 0 0 1 | 1 0 0 0 | 8 | 9 |
| 3 | 2 | 0 0 1 0 | 0 1 0 0 | 4 | 5 |
| 4 | 3 | 0 0 1 1 | 1 1 0 0 | 12 | 13 |
| 5 | 4 | 0 1 0 0 | 0 0 1 0 | 2 | 3 |
| 6 | 5 | 0 1 0 1 | 1 0 1 0 | 10 | 11 |
| 7 | 6 | 0 1 1 0 | 0 1 1 0 | 6 | 7 |
| 8 | 7 | 0 1 1 1 | 1 1 1 0 | 14 | 15 |
| 9 | 8 | 1 0 0 0 | 0 0 0 1 | 1 | 2 |
| 10 | 9 | 1 0 0 1 | 1 0 0 1 | 9 | 10 |
| 11 | 10 | 1 0 1 0 | 0 1 0 1 | 5 | 6 |
| 12 | 11 | 1 0 1 1 | 1 1 0 1 | 13 | 14 |
| 13 | 12 | 1 1 0 0 | 0 0 1 1 | 3 | 4 |
| 14 | 13 | 1 1 0 1 | 1 0 1 1 | 11 | 12 |
| 15 | 14 | 1 1 1 0 | 0 1 1 1 | 7 | 8 |
| 16 | 15 | 1 1 1 1 | 1 1 1 1 | 15 | 16 |

# FIG.4 PRIOR ART



# FIG.5 PRIOR ART



# FIG. 6 PRIOR ART

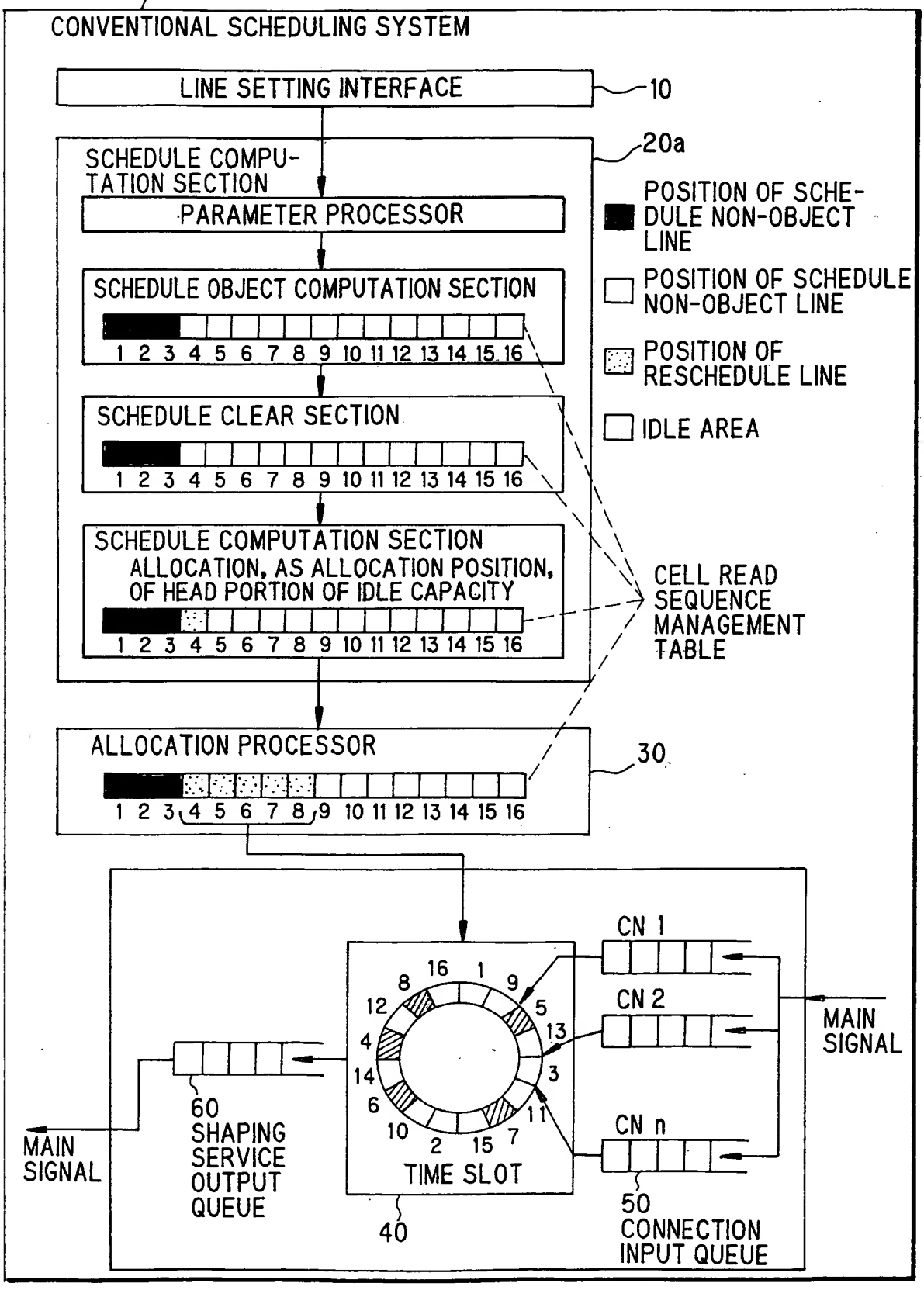


FIG. 7

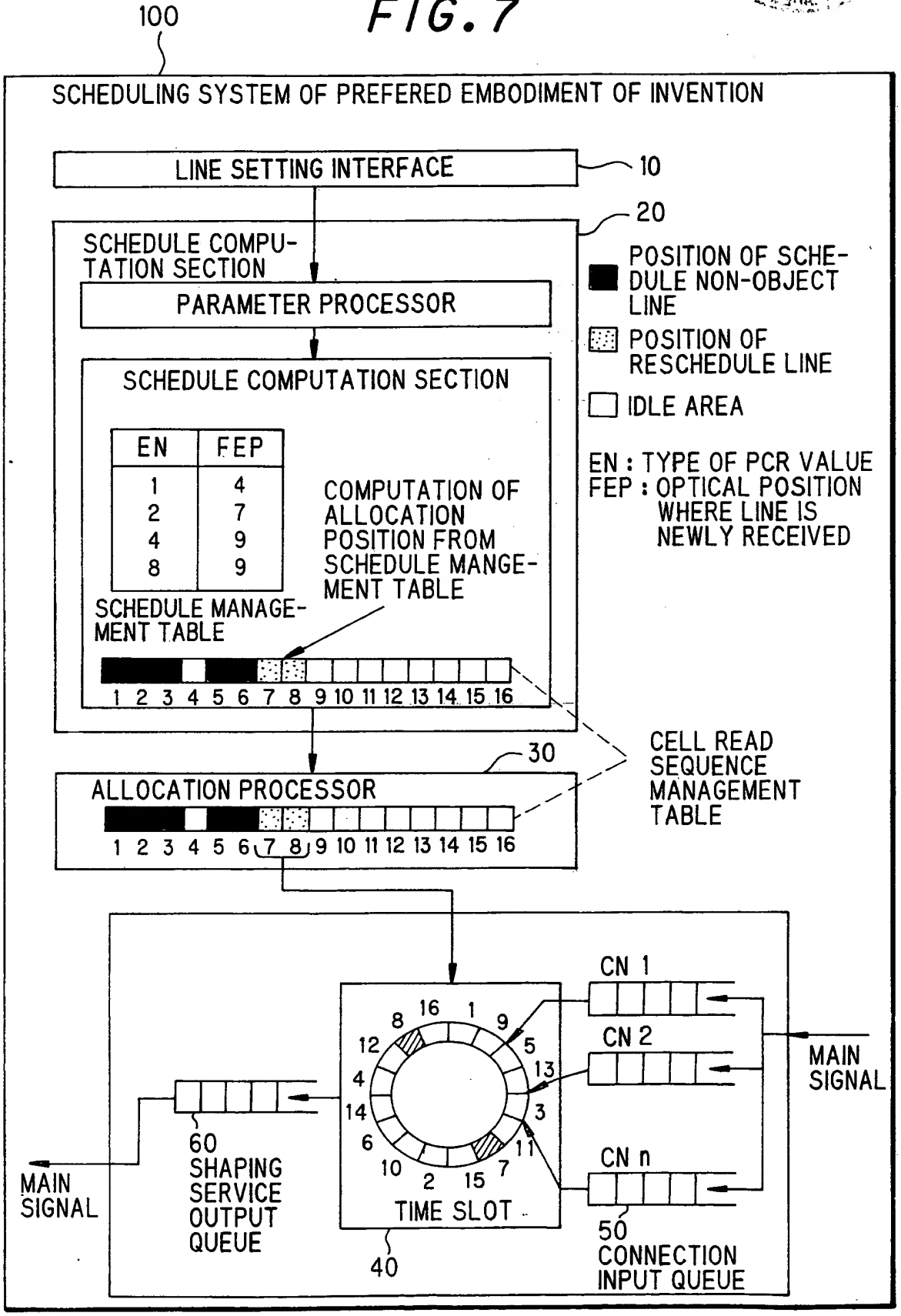

100
SCHEDULING SYSTEM OF PREFERED EMBODIMENT OF INVENTION
LINE SETTING INTERFACE
10
20
SCHEDULE COMPUTATION SECTION
PARAMETER PROCESSOR
SCHEDULE COMPUTATION SECTION
EN
FEP
1
2
4
8
4
7
9
9
COMPUTATION OF ALLOCATION POSITION FROM SCHEDULE MANGEMENT TABLE
SCHEDULE MANAGEMENT TABLE
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16
POSITION OF SCHEDULE NON-OBJECT LINE
POSITION OF RESCHEDULE LINE
IDLE AREA
EN : TYPE OF PCR VALUE
FEP : OPTICAL POSITION WHERE LINE IS NEWLY RECEIVED
30
ALLOCATION PROCESSOR
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16
CELL READ SEQUENCE MANAGEMENT TABLE
CN 1
CN 2
CN n
MAIN SIGNAL
MAIN SIGNAL
60
SHAPING SERVICE OUTPUT QUEUE
TIME SLOT
40
50
CONNECTION INPUT QUEUE

FIG.8

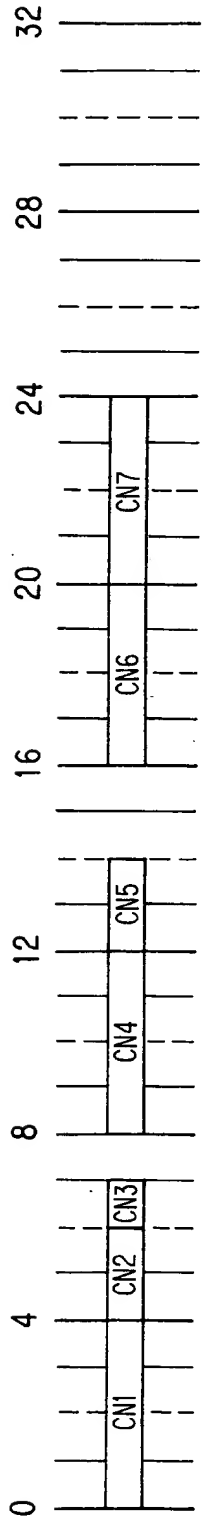
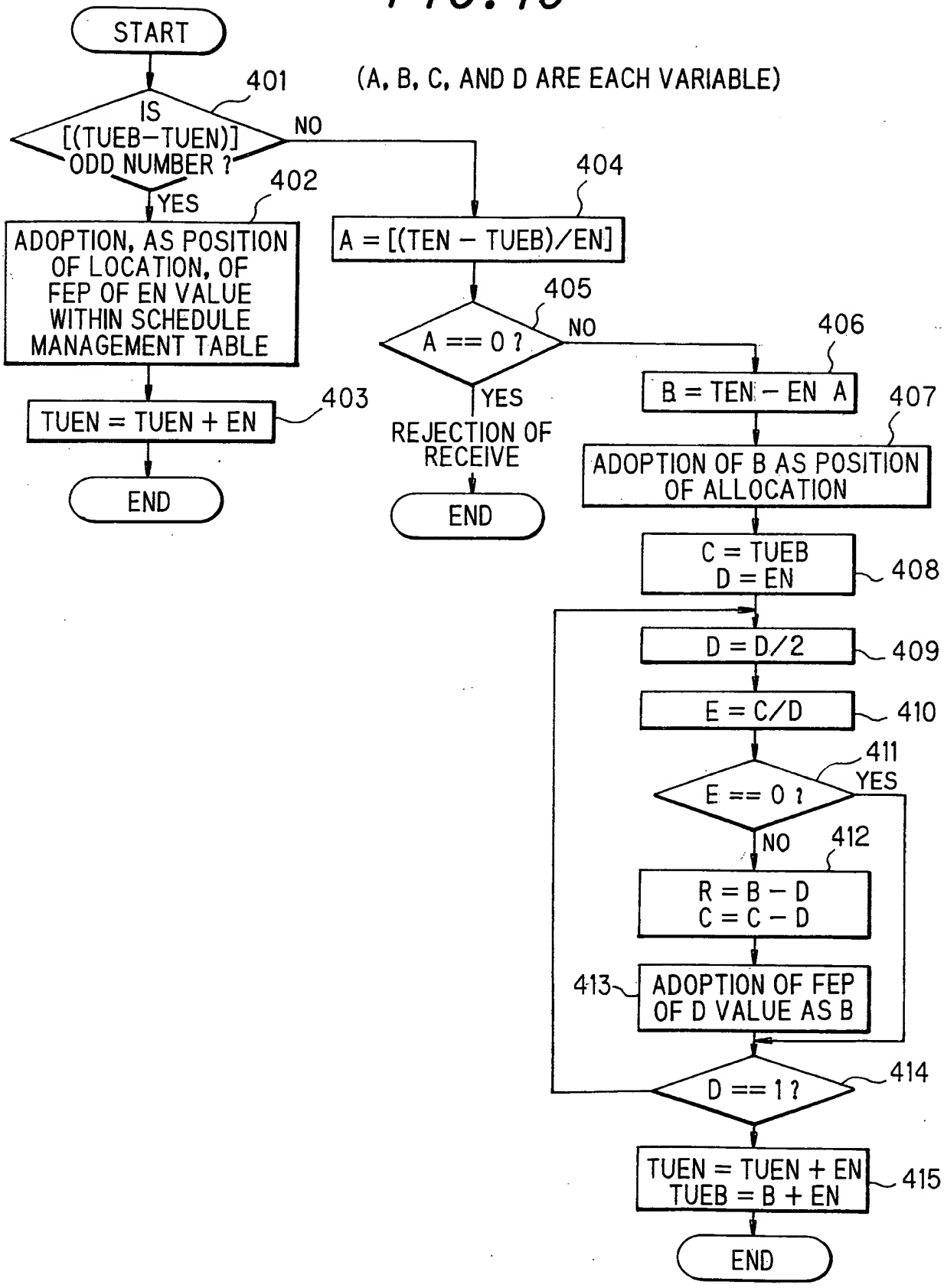

0
4
8
12
16
20
24
28
32
CN1
CN2
CN3
CN4
CN5
CN6
CN7
TEN = 32
TUEN = 21
TUEB = 24

FIG. 9

| EN | FEP |
|---|---|
| 1 | 8 |
| 2 | 15 |
| 4 | 25 |
| 8 | 25 |

EN : TYPE OF PCR VALUE
FEP : OPTICAL POSITION WHERE LINE IS NEWLY RECEIVED

FIG. 10




(A, B, C, AND D ARE EACH VARIABLE)

FIG. 11

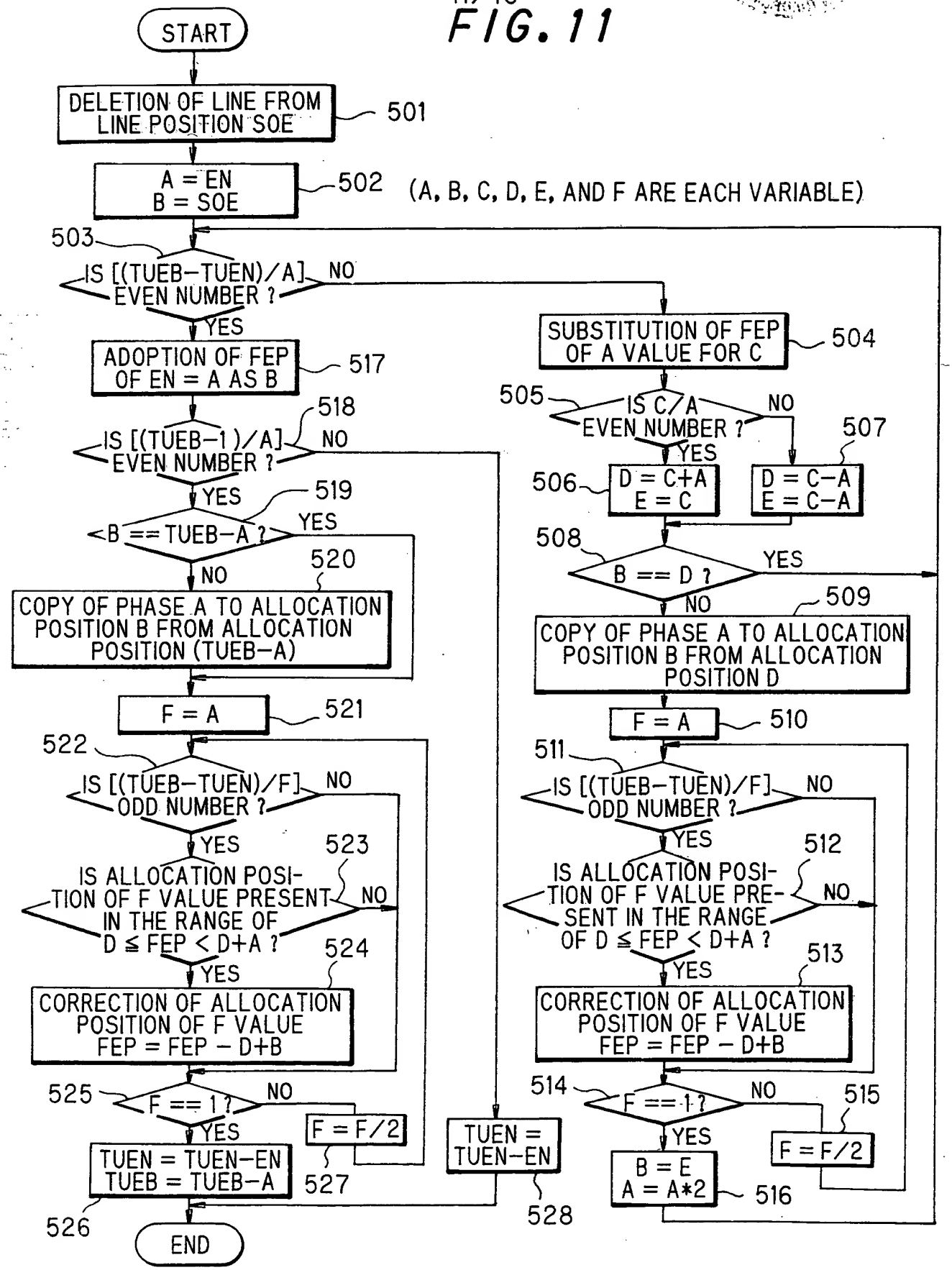

START
DELETION OF LINE FROM LINE POSITION SOE
501
A = EN
B = SOE
502
(A, B, C, D, E, AND F ARE EACH VARIABLE)
503
IS [(TUEB−TUEN)/A] EVEN NUMBER ?
NO
YES
ADOPTION OF FEP OF EN = A AS B
517
518
IS [(TUEB−1)/A] EVEN NUMBER ?
NO
YES
519
<B == TUEB−A ?
YES
NO
520
COPY OF PHASE A TO ALLOCATION POSITION B FROM ALLOCATION POSITION (TUEB−A)
F = A
521
522
IS [(TUEB−TUEN)/F] ODD NUMBER ?
NO
YES
523
IS ALLOCATION POSITION OF F VALUE PRESENT IN THE RANGE OF D ≦ FEP < D+A ?
NO
YES
524
CORRECTION OF ALLOCATION POSITION OF F VALUE FEP = FEP − D+B
525
F == 1 ?
NO
YES
F = F/2
527
TUEN = TUEN−EN
TUEB = TUEB−A
526
END
SUBSTITUTION OF FEP OF A VALUE FOR C
504
505
IS C/A EVEN NUMBER ?
NO
YES
507
D = C−A
E = C−A
506
D = C+A
E = C
508
B == D ?
YES
NO
509
COPY OF PHASE A TO ALLOCATION POSITION B FROM ALLOCATION POSITION D
F = A
510
511
IS [(TUEB−TUEN)/F] ODD NUMBER ?
NO
YES
512
IS ALLOCATION POSITION OF F VALUE PRESENT IN THE RANGE OF D ≦ FEP < D+A ?
NO
YES
513
CORRECTION OF ALLOCATION POSITION OF F VALUE FEP = FEP − D+B
514
F == 1 ?
NO
YES
515
F = F/2
B = E
A = A*2
516
TUEN = TUEN−EN
528

FIG. 12

SCHEDULING OF CELL READ SEQUENCE MANAGEMENT TABLE

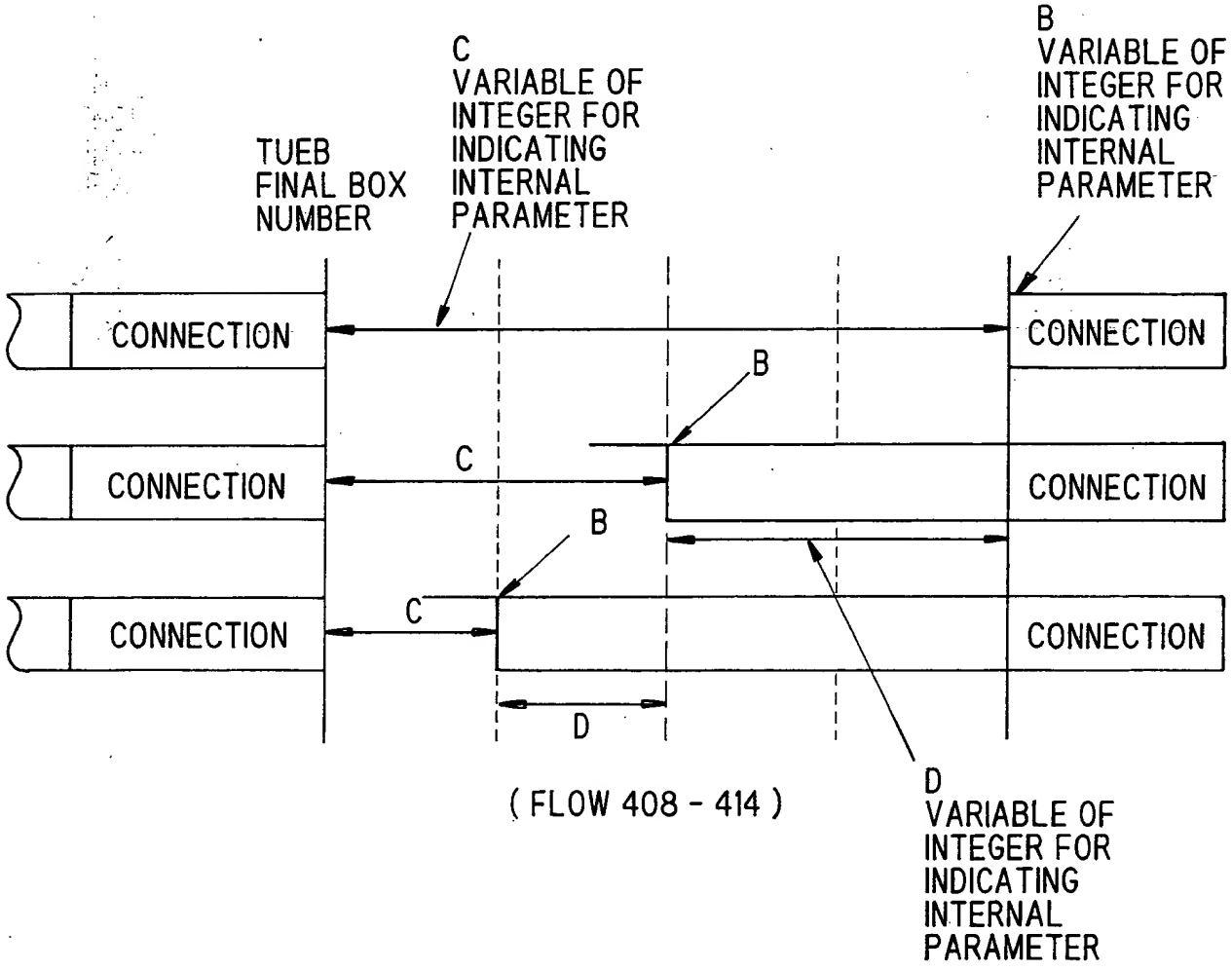


FIG. 13

SCHEDULING OF CELL READ SEQUENCE MANAGEMENT TABLE

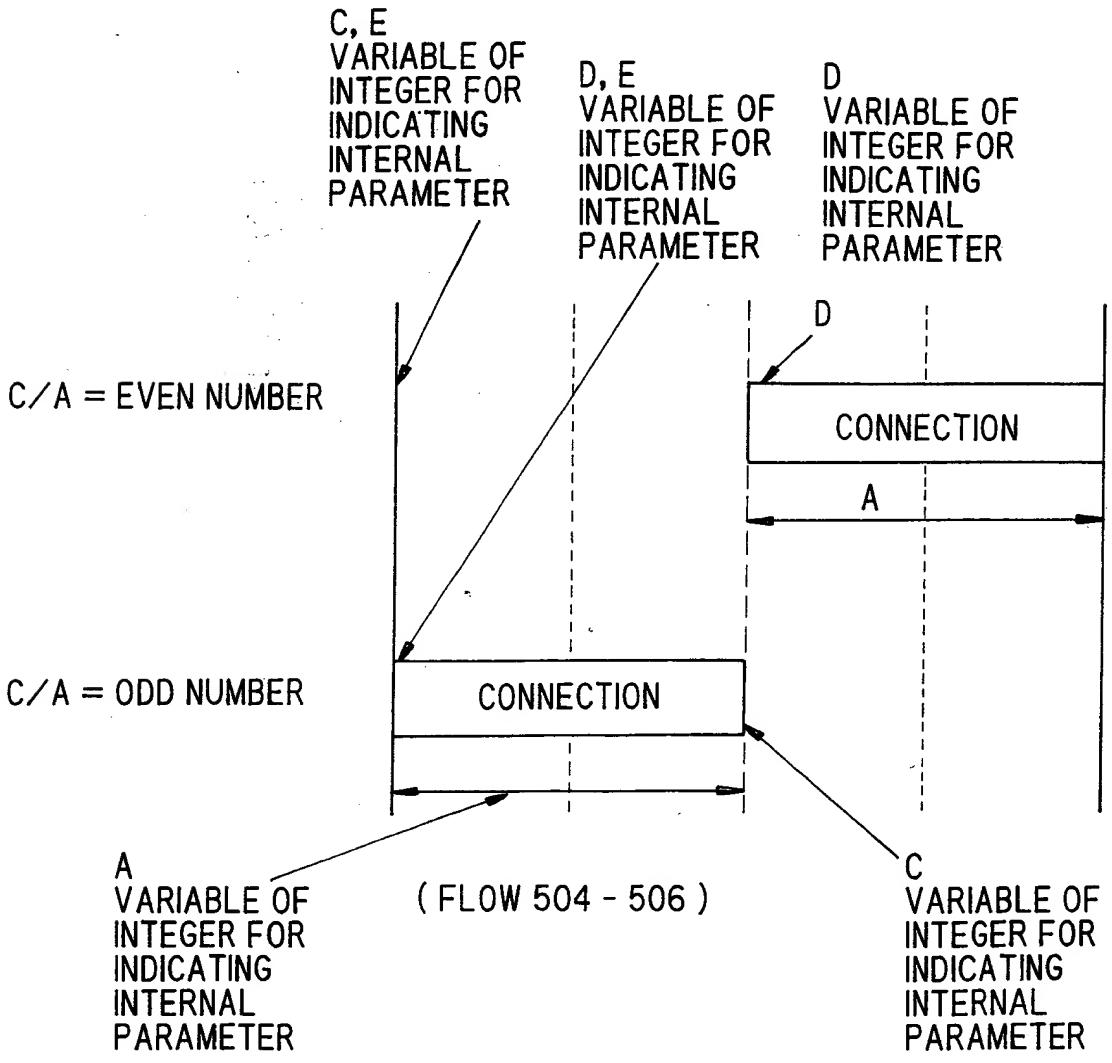


FIG. 14

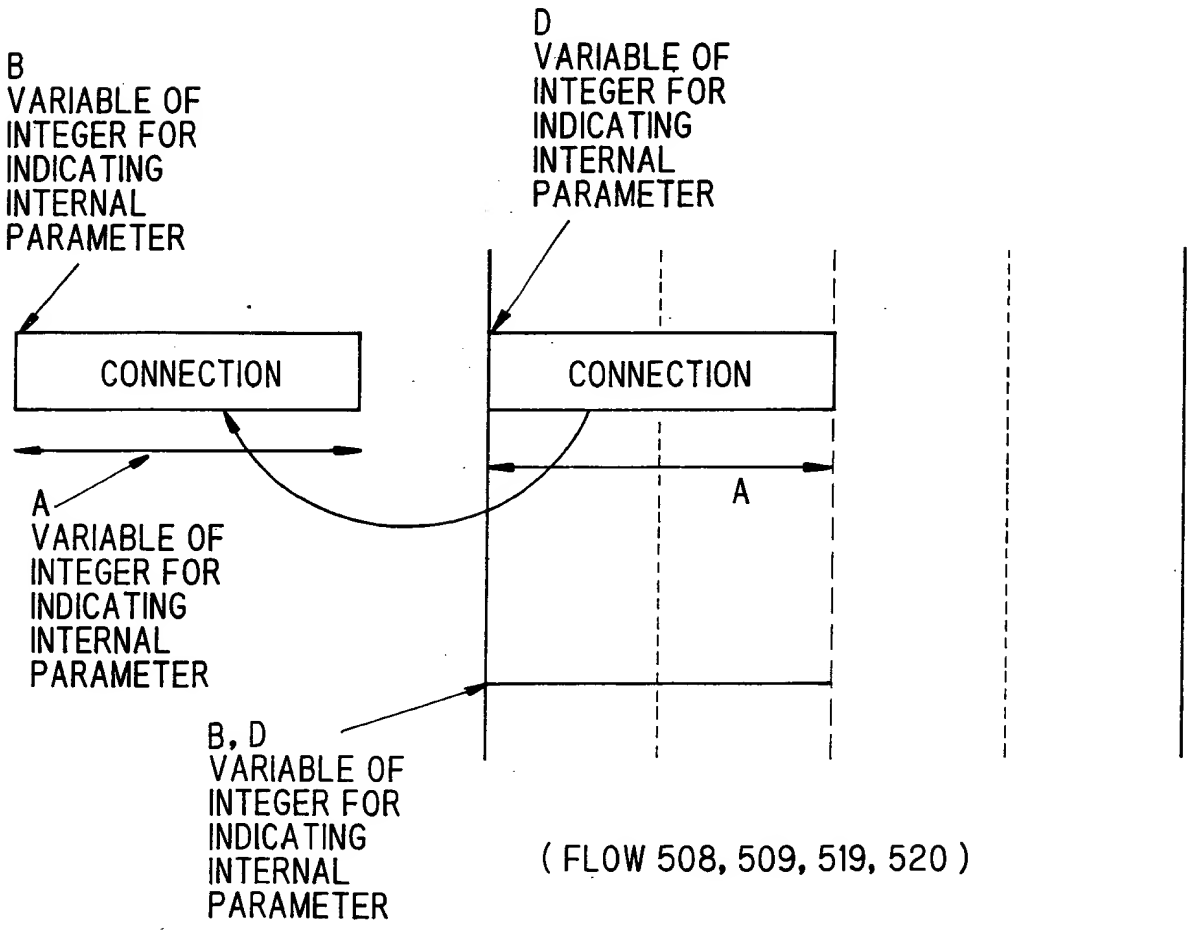
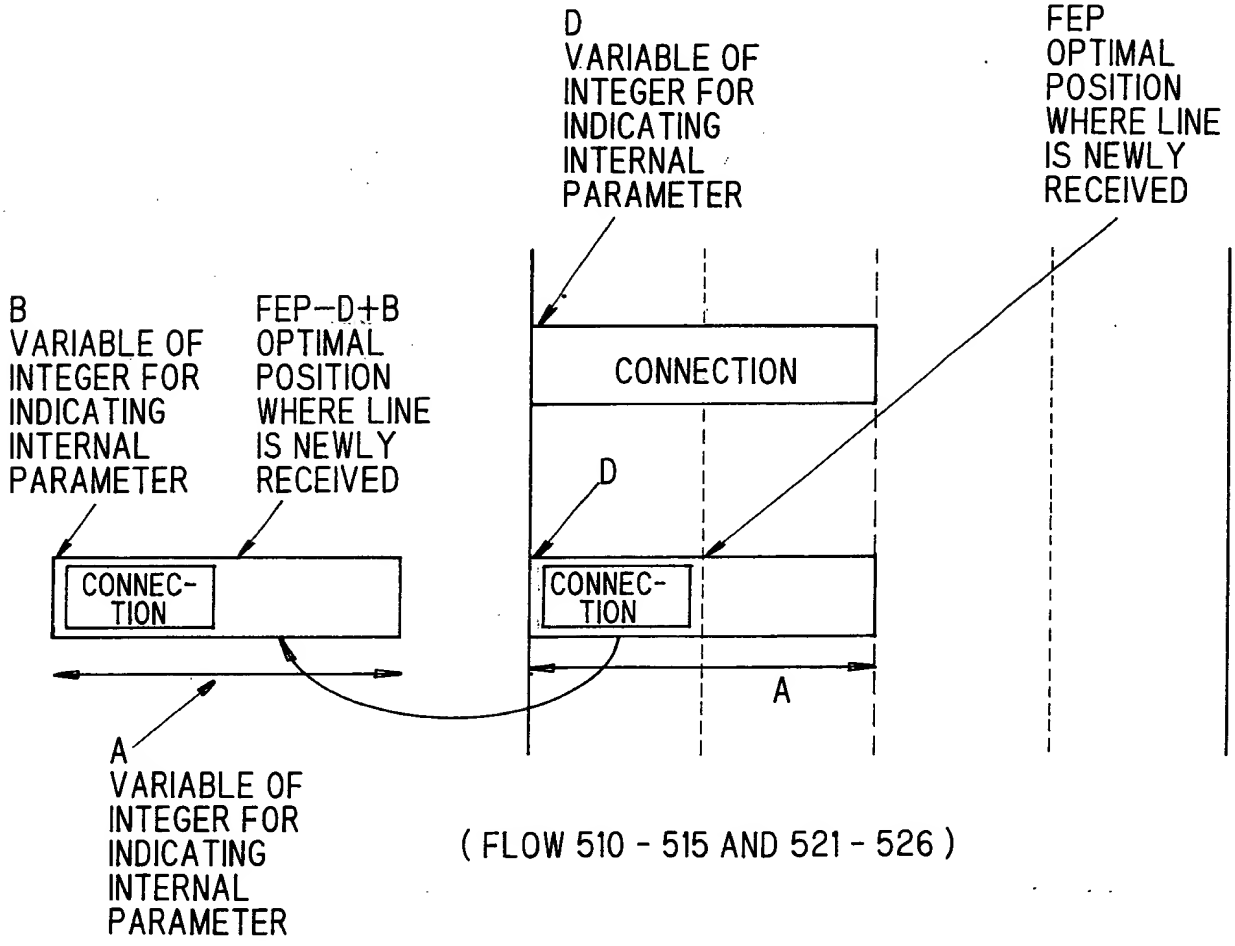

SCHEDULING OF CELL READ SEQUENCE MANAGEMENT TABLE
B
VARIABLE OF
INTEGER FOR
INDICATING
INTERNAL
PARAMETER
D
VARIABLE OF
INTEGER FOR
INDICATING
INTERNAL
PARAMETER
CONNECTION
CONNECTION
A
VARIABLE OF
INTEGER FOR
INDICATING
INTERNAL
PARAMETER
A
B, D
VARIABLE OF
INTEGER FOR
INDICATING
INTERNAL
PARAMETER
( FLOW 508, 509, 519, 520 )

FIG. 15

SCHEDULING OF CELL READ SEQUENCE MANAGEMENT TABLE




( FLOW 510 - 515 AND 521 - 526 )

# FIG. 16

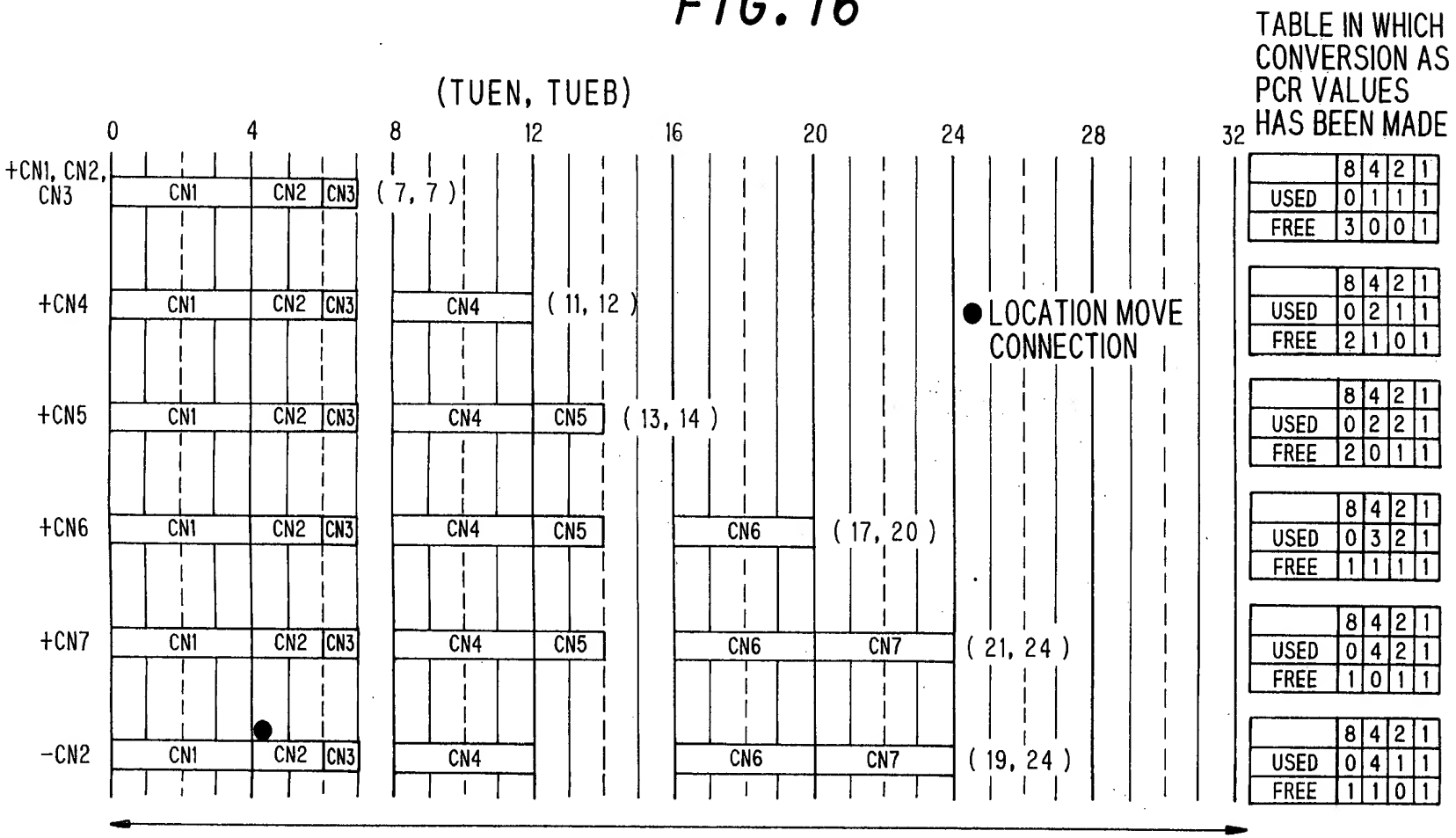



TABLE IN WHICH CONVERSION AS PCR VALUES HAS BEEN MADE

| | 8 | 4 | 2 | 1 |
|---|---|---|---|---|
| USED | 0 | 1 | 1 | 1 |
| FREE | 3 | 0 | 0 | 1 |

| | 8 | 4 | 2 | 1 |
|---|---|---|---|---|
| USED | 0 | 2 | 1 | 1 |
| FREE | 2 | 1 | 0 | 1 |

| | 8 | 4 | 2 | 1 |
|---|---|---|---|---|
| USED | 0 | 2 | 2 | 1 |
| FREE | 2 | 0 | 1 | 1 |

| | 8 | 4 | 2 | 1 |
|---|---|---|---|---|
| USED | 0 | 3 | 2 | 1 |
| FREE | 1 | 1 | 1 | 1 |

| | 8 | 4 | 2 | 1 |
|---|---|---|---|---|
| USED | 0 | 4 | 2 | 1 |
| FREE | 1 | 0 | 1 | 1 |

| | 8 | 4 | 2 | 1 |
|---|---|---|---|---|
| USED | 0 | 4 | 1 | 1 |
| FREE | 1 | 1 | 0 | 1 |

TEN(=32)

TUEN : TOTAL NUMBER OF USED ENTRIES
TUEB : FINAL BOX NUMBER

TEN : TOTAL NUMBER OF ENTRIES
FREE : IDLE AREA
USED : USED AREA
CN : CONNECTION